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Investigation of physical and mechanical properties of asphalt mixtures modified by adhesive additive

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Abstract

© SGEM2018. Asphalt concrete correspond to dispersive strengthened composition material, in which organic matrix-bitumen takes over all the load and forces. The structure and properties of asphalt concrete are determined mainly by the phase and physical state of the organic matrix-bitumen. In this paper the results of «Adgezolin» additive in the composition of asphalts based on oxidized (produced by OJSC «TAIF-NK») and non-oxidized (Elkhovskoe oil refinery plant) bitumen are discussed. It is revealed, that adhesive additive positively affects asphalt properties. Particularly, adding 0.8 wt % into oxidized bitumen increases R20 and R50, as well as improves R0 parameters. The asphalts based on non-oxidized BNN 80/120 bitumen stand for higher R20 and R50 values comparing with asphalt properties based on oxidized bitumen. However, adding adhesive to asphalts based on non-oxidized bitumen results to the highest strength values. At the same time the asphalt mixtures based on non-oxidized bitumen have higher water resistance value than asphalt based on oxidized bitumen, which makes the former more attractive.

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Keywords

Adhesion additive, Bitumen, Compressive strength, Mineral pavement

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